DOCUMENT RESUME

ED 423 686 FL 025 489

AUTHOR Huang, Su-Yueh
TITLE Differences in the Nature of Discussion between Peer Response Sessions Conducted on Networked Computers and Those Conducted in the Traditional Face-to-Face Situation.
PUB DATE 1998-07-00
NOTE 8p.; Paper presented at the Annual Meeting of the International Writing98 Conference (Poitiers, France, July 2-4, 1998).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Classroom Communication; Classroom Techniques; College Students; Comparative Analysis; *Computer Mediated Communication; *English (Second Language); Foreign Countries; Higher Education; *Language Patterns; Language Usage; Second Language Instruction; Student Attitudes; *Teleconferencing; Writing (Composition); *Writing Instruction
IDENTIFIERS Taiwan

ABSTRACT

This study investigated the nature of students' discussion in peer response sessions in an English-as-a-Second-Language composition class in Taiwan. Subjects were 17 university students, divided into four writing groups. Half of the 16 peer response sessions were computer-mediated (CM), the other half in face-to-face interaction (FF). Analysis of transcripts of the sessions indicate significant differences in the ways various types of speech were distributed in the two contexts. In the CM context, since discussions were conducted slowly, students tended to rush through their discussions by quickly typing out the problems they perceived in peers' writing and the revisions suggested, without much explanation of their reasons or reacting to what other group members said by showing agreement or disagreement. In FF sessions, students tended to accompany their comments with explanations of their plans for writing more, and the students were also more likely to support or refute each others' arguments. The CM context did have one advantage: it produced a larger proportion of praise than the FF context. In general, however, the FF context appeared to produce superior discussions, suggesting that use of technology does not always guarantee success in the language classroom. (Contains 11 references.) (MSE)

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Differences in the nature of discussion between peer response sessions conducted on networked computers and those conducted in the traditional face-to-face situation

ED 423 686

Su-yueh Huang, ED D.
Dept. of Foreign Languages & Literature, Tunghai University, Taichung, Taiwan
The Language Centre, University of Brighton, U.K.

A paper presented in the International Writing98 Conference
Poitiers, France, July 2-4, 1998

Abstract

In recent years writing teachers who believe in peer collaboration have begun using computer networks which allow immediate interaction among students throughout the writing process, including the prewriting, writing, and revising stages. The interactive nature of networked computers goes well with the collaborative writing pedagogy advocated by Bruffee (1984), Elbow and Belanoff (1989), and Bizzell (1982), and has been viewed as a desirable element in writing classrooms. Researchers have also started to examine the effectiveness of using these systems to facilitate writing.

This is a study of four writing groups (a total of 17 students) enrolled in a two-semester EFL composition class at a university in Taiwan. The process approach to teaching was adopted and small-group peer response sessions were used to facilitate students' revision. Half of the peer response sessions were conducted on networked computers (program name: Daedalus) and the others in the traditional face-to-face situation. The purpose of this study is to examine the nature of the discussion produced in these two contexts in order to determine which was more effective for conducting peer response sessions. The research question is: Is there any difference between the computer-mediated (CM) and face-to-face (FF) contexts in the distribution of various types of speech produced by students in peer response sessions? Data consisted of transcripts made of peer response sessions held in the two contexts. A total of 16 peer response sessions were analyzed, of which half were conducted on networked computers and half in the FF context.

The findings showed that there was significant difference in the ways the various types of speech were distributed in the two contexts. In the CM context, since discussions were conducted at a very slow rate, students tended to rush through their discussions by quickly typing out the problems they perceived in peers' writing and the revision suggestions they wished to make, without going into great details to explain reasons for writing in certain ways or reacting to what other group members said by showing agreement or disagreement. On the other hand, in FF sessions, students tended to accompany their discussions with explanations of their plans for writing more, and students were also more likely to support or refute each other's arguments. However, the CM context did have one advantage, i.e., it produced a larger proportion of praise than the FF context. In general, the FF context appeared to have produced superior discussions. Therefore, writing teachers should be aware that technology does not always guarantee success in language classrooms.

Keywords: peer feedback, computer-assisted learning, computer-mediated communication, written language instruction, EFL

FL025489

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Su-yueh Huang

Introduction

In recent years writing teachers who believe in peer collaboration have begun using computer networks to facilitate interaction among students throughout the writing process. The interactive nature of networked computers goes well with the collaborative writing pedagogy advocated by Bruffee (1984), Elbow and Belanoff (1989), and Bizzell (1982), and has been viewed as a desirable element in writing classrooms. One way a teacher can integrate these computers into the writing classroom is to use them to help students discuss writing in peer response sessions. For an understanding of how effective this approach is, the nature of the discussion students produce in peer response sessions could be compared with that produced in peer response sessions conducted in a traditional way, i.e., face to face. This paper wishes to address the following issue by presenting the findings of a study conducted by the author herself: Is there any difference between the computer-mediated (hereafter referred to as CM) and face-to-face (hereafter referred to as FF) contexts in the distribution of various types of speech produced by students in peer response sessions? At the end of the paper, teaching implications are discussed.

Review of the Literature

In the second language context, some research has been conducted on the effectiveness of using InterChange, a module in a computer program named DIWE (Daedalus Integrated Writing Environment) which allows real-time group discussion, to help students brainstorm for ideas for writing or revising (Beauvois, 1992a, 1992b, 1993, 1994; Kelm, 1992; Kern, 1995). Quite a few studies have investigated the nature of discussion produced on networked computers. Sullivan and Pratt's (1996) study of ESL university students showed that the comments made during peer response (hereafter referred to as PR) sessions on networked computers were more focused on the critique of peers' texts, while the ones produced in the FF context were filled with personal narratives which focused on students themselves, rather than the critiquing tasks. Kern's (1995) study proved that the discourse produced by FFL (French as a Foreign Language) students on networked computers performed a larger variety of functions than that produced in traditional oral discussions. Both of these studies appear to suggest the advantages of conducting discussions on networked computers. Warschauer (1996) studied how students in an advanced ESL college composition class interacted with one another in prewriting discussions held in both the CM and FF contexts. He claimed that CM discussions had fewer of those features which were often found in FF discussions, such as questioning, recasting, confirmation checks, and paraphrasing. However, to the best of the researcher's knowledge, so far no studies have compared how Chinese students perform in CM and FF peer response sessions in terms of the nature of the discourse produced. To provide insight into the effectiveness of using networked computers in the teaching of writing, research on what students talk about in CM and FF peer response sessions is greatly needed.

Methods

This study compared the types of discourse students produced in PR sessions held on networked computers, through the use of InterChange, and in the FF setting. The subjects were 17 students enrolled in a two-semester EFL composition course in the Dept. of Foreign Languages and Literature at a university in Taiwan. The process approach to teaching was adopted and small-group PR sessions were held to help the students get peer feedback to facilitate revision. The students were divided into four writing groups, with four or five

members in each. During the year, seven essays were assigned, most of which were expository in nature. For each assignment, the students were asked to give copies of their first drafts to their group members to read in preparation for a PR session. To push the students to finish reading their peers' drafts before a PR session, the instructor required the students to exchange first drafts at least two days before the session and to write their comments and suggestions for revision for each peer on a critique sheet. The students were given 50-60 minutes for each PR session. To provide guidance on what aspects to critique when reading an essay, the students were directed to a list of questions provided in the textbook for each type of essay. The PR sessions for assignments 2, 4, and 6 (referred to as PR2, 4, 6) were conducted on networked computers, while those for assignments 1, 3, 5, and 7 (referred to as PR1, 3, 5, 7) were conducted in the traditional FF format. The data used in this study were transcripts made of PR sessions held in the two contexts for assignments 4, 5, 6, and 7. Since students' interaction might be affected by the composition of the groups, the grouping for the PR4 and PR5 remained the same, and so was the grouping for PR6 and PR7. Students' combined performances in the two CM sessions were compared with those in the two FF ones.

Results and Discussion

In the following discussion of the discourse produced in peer response sessions, a student whose writing was being discussed is referred to as an author (abbreviated as "AUT"), and a student who was responding to an author's writing is referred to as a responder (abbreviated as "RES"). The discourse produced was classified into the following 18 types in terms of discourse functions: (1) SOC/RIT: socializing rituals (e.g., greeting, leave-taking, showing appreciation for peers' comments), (2) PRO: talk about group procedures (e.g., deciding whose paper should be discussed first, how much time should be devoted to a paper, how to discuss a certain paper), (3) AUT/EXP: the author informing a responder about his/her plan for writing or the meaning of the written text, (4) AUT/PRO: the author informing a responder about the process or problems of his/her writing, (5) AUT/EVA: the author evaluating his/her own writing, (6) AUT/PWP: the author presenting a writing problem he/she encountered during writing in order to seek assistance from peers, (7) AUT/RES/REA: the author or a responder reacting to a group member's comment about an essay, (8) AUT/RES/ELI: an author or a responder eliciting information or response from his/her group, (9) AUT/RES/CLA: an author or a responder seeking clarification for what he/she has heard, (10) AUT/RES/MET: an author or a responder making a metalinguistic, metadiscoursal, or metacognitive comment about the discussion of writing, (11) AUT/RES/OFF: an author or a responder getting off task to engage in joking or chatting which was not closely related to the discussion or writing task, (12) AUT/RES/HEL: an author or a responder helping a speaker express an idea, (13) RES/PRO: a responder pointing out a problem in an essay, (14) RES/PRA: a responder praising an author's writing, (15) RES/MIR: a responder mirroring back his/her understanding of a piece of writing by restating or summarizing what he/she thought the author did in the writing, (16) RES/SUG: a responder making a suggestion for writing, and (17) RES/SHA: a responder sharing his/her own plan for writing when the group was not discussing his/her own essay, and (18) AUT/RES/ETC: other speech that did not fall under any of the above categories. The distribution of the 18 types of speech is shown in Table 1. In this table, the performances of the four groups are combined and only averages are presented. To compare the CM context with the FF one, the performances in the two CM sessions (PR4 and PR6) are combined, and so are the performances in the two FF sessions (PR5 and PR7).

Table 1: Distribution of Various types of speech produced by students in PR4-7

	PR4 (CM) avg. (%)	PR6 (CM) avg. (%)	**PR4+6 avg. (%)**	PR5 (FF) avg. (%)	PR7 (FF) avg. (%)	**PR5+7 avg. (%)**	Difference (CM-FF)
SOC/RIT	2.7	2.8	**2.8**	0.4	0.5	**0.5**	+2.3
PRO	10.5	11.1	**10.8**	2.8	3.1	**3.0**	+7.8
AUT/PRO	1.4	1.0	**1.2**	1.3	1.4	**1.4**	- 0.2
AUT/EXP	2.6	2.0	**2.3**	10.4	11.3	**10.9**	- 8.6
AUT/EVA	0.6	0.6	**0.6**	0.2	0.1	**0.2**	+0.4
AUT/PWP	1.3	1.7	**1.5**	0.9	1.9	**1.4**	+0.1
AUT/RES/REA	8.6	11.8	**10.2**	19.6	17.7	**18.7**	- 8.5
AUT/RES/ELI	10.7	6.9	**8.8**	9.3	9.3	**9.3**	- 0.5
AUT/RES/CLA	1.4	1.7	**1.6**	2.0	2.7	**2.4**	- 0.8
AUT/RES/MET	2.1	2.5	**1.3**	3.1	2.8	**3.0**	- 1.7
AUT/RES/OFF	5.5	4.5	**5.0**	8.0	5.2	**6.6**	- 1.6
AUT/RES/HEL	0.0	0.0	**0.0**	0.9	1.3	**1.1**	- 1.1
RES/PRO	19.3	15.6	**17.5**	17.0	13.2	**15.1**	+2.4
RES/PRA	5.4	10.1	**7.8**	2.6	2.9	**2.8**	+5.0
RES/MIR	0.0	1.1	**0.6**	1.5	2.7	**2.1**	- 1.5
RES/SUG	28.0	26.8	**27.4**	18.6	20.4	**19.5**	+ 7.9
RES/SHA	0.0	0.1	**0.1**	0.4	2.1	**1.3**	- 1.2
AUT/RES/ETC	0.1	0.2	**0.2**	1.3	1.3	**1.3**	- 1.1
Total	**100.2**	**100.5**	**100.4**	**100.3**	**99.9**	**100.1**	

Note: Avg =average. Difference = the average of PR4+6 after the subtraction of the average of PR5+7.

The chi-square test for goodness of fit was performed to see if there was significant difference in the distribution of the various types of speech produced in the two contexts. The average performance of the two CM sessions was compared with that of the two FF ones. The Chi-square value was $\chi 2$ (17, N = 2) = 60.71*, $p < .05$. The results showed that the distribution patterns were significantly different. It seemed that the context for discussion did make a difference in the types of speech produced.

According to Table 1, the types of speech in which there were obvious differences between the CM and FF contexts were, in descending order of degree of difference: AUT/EXP, AUT/RES/REA, RES/SUG, PRO, RES/PRA, and RES/PRO. Out of these six, PRO was the only type of speech that did not concern the discussion of writing tasks. Since the author of this paper wishes to investigate the way the students discussed writing in peer response sessions, PRO was excluded from the following discussion. The discussion intends to shed light on the advantages and disadvantages networked computers posed as a vehicle for conducting peer response sessions. The characteristics of CM discussions are as follows:

1. **Smaller proportion of speech devoted to explaining students' own plans for writing as well as expressing agreement or disagreement with other group members' comments**

The data showed that the students apparently used a smaller proportion of their speech in CM discussions to explain their writing plans (CM=2.3%, FF=10.9%) and to react to others' comments by expressing agreement or disagreement (CM=10.2%, FF=18.7%). This probably had to do with the students' much slower rate of speech production in the CM context. Data from this study which has not been presented previously in this paper showed that in groups

with four members, the two FF discussions examined produced an average of 97.6 words per minute, while their CM equivalent produced only 28.1, with the former producing 3.5 times more. Similarly, in groups with five members, the two FF discussions produced an average of 92.7 words per minute, while the CM ones produced only 37.1, with the former producing 2.5 times more. In the CM context, since discussions proceeded at a much slower rate, the students often rushed through their discussions. Aware of time pressure, these students had probably given priority to tasks which they perceived as most important for peer response sessions, i.e., pointing out problems and suggesting ways to revise, thus leaving little time for explaining their own writing or agreeing or disagreeing with what other group members said. On the other hand, in the FF context, the students were able to talk faster and thus could better afford to go into greater length in explaining their own writing plans and reacting to other people's comments.

2. **Greater proportions of speech devoted to discussing problems in peers' texts and making suggestions for revision**

The students devoted a greater proportion of their time to stating the problems of peers' essays and proposing suggestions for revision in CM discussions than in FF ones (discussing problems: CM=17.5%, FF=15.1%; making suggestions: CM=27.4%, FF=19.5%). Based on this finding and the one mentioned in the previous paragraph, it is suspected that, when working on the computer, due to time pressure, the students often just transferred what they had recorded on their critique sheets, i.e., the problems they identified in peers' writing and the suggestions they wished to make, and then quickly moved on to the next author, without spending much time on supporting or refuting what others said by explaining their own writing or agreeing or disagreeing with others. On the other hand, the smaller proportion of RES/PRO and RES/SUG in the FF context may have been a result of the students devoting more of their time to explaining their own writing and reacting to the opinions of other group members. However, it should be noted that, since the speech production rate in FF discussions was 3.5 (for 4-person groups) or 2.5 times faster (for 5-person groups) than their equivalent in CM discussions, the students still managed to make a larger quantity of RES/PRO and RES/SUG statements in the FF context than in the CM one. This meant that FF discussions were more thorough as far as quantity of speech is concerned, because the students not only made more speech explaining the way they wrote and reacting to what others said, but they also produced more discussion about writing problems and ways to revise.

3. **Greater proportion of speech devoted to praising peers' writing**

The study showed that the students were more likely to praise peers' writing in CM discussions than in FF ones, as indicated by the percentages of speech devoted to praise in the two contexts: 7.8% and 2.8%, respectively. This may have to do with the way the responding task was set up by the teacher, who required the students to write down both the strengths and weaknesses they perceived in peers' essays on critique sheets. Since there was not enough time for elaborate discussion on the computer, the students probably just typed out the comments they had prepared on their critique sheets, which almost always contained praise, and then quickly moved on to the next essay. In contrast, in the FF context, since the students went into more depth in explaining their writing and reacting to what others said, they had less time to deliver the praise they had put down on their critique sheets. This might be because the students were so involved in the discussions about writing problems, which were often heated, that they had sometimes forgotten to praise their peers. Thus, the CM context appeared to have produced an environment which provided more moral support for learning.

Conclusions and Implications

The ways the various types of speech were distributed in the CM and FF contexts were significantly different. Therefore, the context for discussions did make a difference to the nature of the discourse which students produced in peer response sessions. In the CM context, since discussions were conducted at a very slow rate, students tended to rush through their discussions by typing out quickly the problems they perceived in peers' writing and the revision suggestions they wished to make, without going into great details to explain their reasons for writing in certain ways or reacting to what other group members said by showing agreement or disagreement. On the other hand, the students tended to accompany their discussions with explanations of their plans for writing more in FF sessions, and the students were also more likely to support or refute each other's arguments in this context. Therefore, the brainstorming of ideas which InterChange was intended to induce occurred to a smaller extent in the CM context than in the FF one. In other words, students used networked discussions more as a vehicle for creating an idea bank to help their peers revise than as a channel for peer interaction, while the opposite was true with FF discussions. However, it should be noted that the students still produced a larger quantity of speech to point out writing problems and make suggestions for revision in the FF context. Thus, concerning the way writing issues were dealt with, the FF context appeared to have produced superior discussions.

However, the CM context did have one advantage, i.e., it produced a larger percentage of statements of praise than the FF context. In the latter context, the students seemed to be more absorbed in the discussion of what was wrong with peers' writing and what should be done about it, and they had forgotten to praise more often. As far as the percentage of statements of praise was concerned, the CM context seemed to have created a more supportive environment for discussing writing.

A few teaching implications could be drawn from this study. Teachers should conduct most PR sessions face-to-face to enjoy the fuller discussions this context offers. However, if a PR session is to be conducted on networked computers to enjoy the supportive atmosphere they provide, teachers should make provisions for the accompanying problem mentioned in this study. The fewer opportunities for students to have extended discussions about their writing plans, or to agree and disagree with what others say on networked computers, were largely the result of the slow speech production rate allowed by this context. Since this problem cannot be solved easily, the only likely solution is to give ample time for discussion. In this study, each paper, of the length of two to three typed pages, was given 12 to 15 minutes. Therefore, the researcher suggests that at least 20 minutes be allotted for each paper of such length. In this way, students might be allowed to discuss writing more fully. Teachers should monitor students' performance carefully to make sure that the time allotted is sufficient and that there are no other problems.

Since networked computers, as used in the context of this study, seem to pose grave disadvantages for conducting peer response sessions, future researchers should perhaps find other ways of conducting peer response sessions on networked computers which are effective, or explore other activities for which networked computers can be used more beneficially. In the rush for computer technology in educational settings, caution should be taken to examine whether such technology does all that it promises and what is the best way to use it. In the future, more research should be done to shed further light on other advantages and disadvantages networked computers pose for the teaching of writing.

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